

Sub-group 6: Indirect Effects of Other Fuels

Presented to the LCFS Expert Workgroup

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Sacramento, CA

Subgroup 6 Membership

- John Courtis, ARB Staff
- Blake Simmons, Sandia (Subgroup Chair)
- Bob Larson, EPA (Subgroup Co-chair)
- Seth Meyer, University of Missouri
- Wally Tyner, Purdue University
- Phil Heirigs, Chevron Global Downstream LLC
- Jesper Kløverpris, Novozymes A/S
- Paul Wuebben, South Coast Air Quality Management District

Task 1: Establish Criteria for Defining “Indirect Effects of Other Fuels”

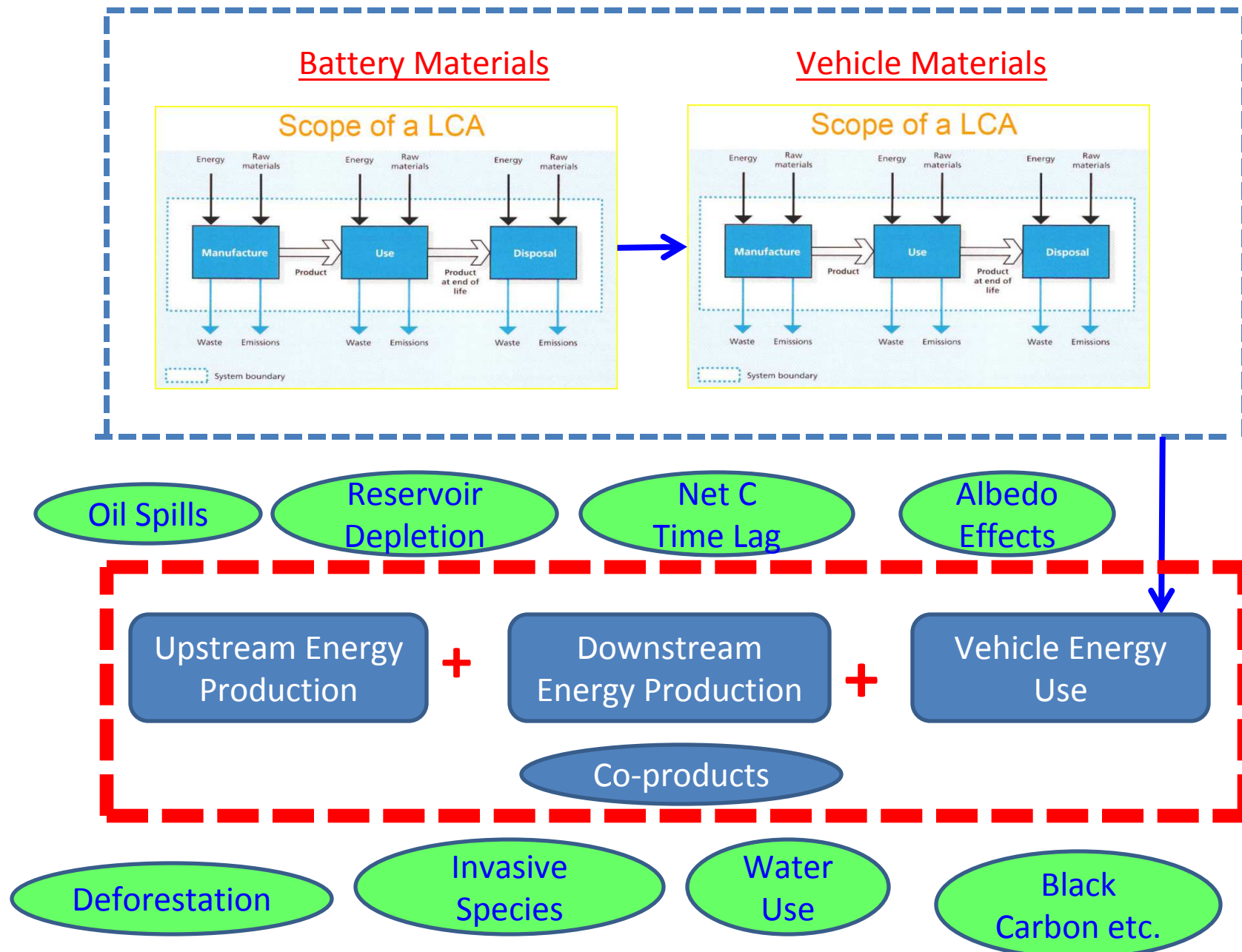
Effects influencing GHG emissions and the carbon intensity (CI) of fuels:

1. Direct effects: All significant effects within the primary production chain or life cycle (cradle to grave)
2. Co-product effects: Significant effects caused by co-products from the production chain (handled by the system expansion – or displacement – methodology)
3. Other market-mediated effects: Significant effects caused by changes in economic markets, e.g. ILUC or changes affecting marginal electricity or fossil fuel supply. This also includes ‘carbon leakage’ as a function of increased production/consumption.

**It is recommended to define indirect effects as
‘market-mediated effects other than co-product effects’ (3)**

It is also recommended to consider carefully if direct and co-product effects (2 and 3) have been overlooked for some fuels

Is Everything Outside the Red Line an Indirect Effects under the LCFS?



Task 2: Develop a List of Indirect Effects to be Assessed

- We have developed an initial list of potential indirect effects as a function of fuel type
- Excel spreadsheet – working draft for comment
- Need to further refine for division between direct and indirect effects
- Need input from ARB on scope for the sub-group on the list
- Petition input from the EWG on input thus far as well
- Examples:
 - Gasoline/diesel
 - Coal
 - BEVs + Hybrids
 - Natural gas
 - Electricity
 - Hydrogen

Subgroup 6 Milestones: Update

	Goal	Deadline
Task 1	Establish Criteria for Defining Indirect Effects of Other Fuels	May 2010 ✓
Task 2	Develop a List of Indirect Effects to be Assessed	June 2010 ✓
Task 3	Identify Significant Gaps in Current Indirect Effect Analyses	July 2010
Task 4	Identify Available Data Sets and Models for Indirect Effects as a Function of Fuel Type	September 2010
Task 5	Develop a Long-Term Work Plan for the ARB and LCFS	October 2010